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EXPRESS MAIL LABEL NO. EL746187853US

PATENT APPLICATION
Docket No: 15268.1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Gast et al.

Serial No.

09/646,767

Filed:

September 19, 2000

For:

PROPELLANTS FOR GAS GENERATOR

Examiner:

Not Yet Assigned

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) Art Unit
) Not Yet Assigned
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INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. § 1.97

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Please find, pursuant to 37 C.F.R. § 1.98(a)(1), the enclosed Form PTO-1449 which contains a list of all patents, publications, or other items that have come to the attention of one or more of the individuals designated in 37 C.F.R. § 1.56(c). While no representation is made that any of these references may be "prior art" within the meaning of that term under 35 U.S.C. §§ 102 or 103, the enclosed list of references is disclosed so as to fully comply with the duty of disclosure set forth in 37 C.F.R. § 1.56.

Moreover, while no representation is made that a specific search of office files or patent office records has been conducted or that no better art exists, the undersigned attorney of record believes that the enclosed art is the closest to the claimed invention (taken in its entirety) of which

the undersigned is presently aware, and no art which is closer to the claimed invention (taken in its entirety) has been knowingly withheld.

In accordance with 37 C.F.R. §§ 1.97 and 1.98, a copy of each of the listed references or relevant portion thereof is also enclosed.

In accordance with 37 C.F.R. § 1.98(c), all English translations within the possession, custody, control or availability of anyone designated in 37 C.F.R. § 1.56(c) of each nonenglish reference, if any, are also enclosed.

Statement of Relevance of References Listed
Unaccompanied by English Translation
Under 37 C.F.R. § 1.98(a)(3)

In accordance with 37 C.F.R. § 1.98(a)(3), the following concise explanation of the relevance of each listed reference that is not in the English language and unaccompanied by a translation into English is provided.

DE 44 01 213 C1: Gas-generating mixtures for rescue and air bag systems, as well as rocket and tubular weapon drive systems comprise high nitrogen and low carbon fuels GZT, TAGN, NG or NTO catalysts for pollutant gas reduction/reaction acceleration of V_2O_5/McO_3 mixed oxides and/or oxide mixtures, the oxidizer $Cu(NO_3)_2 \cdot 3Cu(OH)_2$, which permits a cold, rapid combustion and optionally the additional coolant Fe_2O_3 , which has further oxidizer characteristics. (Corresponds to U.S. Patent No. 5,542,998).

DE 44 01 214 C1: A gas-generating mixture for rescue and air bag systems, as well as for rocket and tubular weapon drive systems comprises high nitrogen, low carbon fuels GZT, TAGN, NG or NTO, the cold and fast burning oxidizer $Cu(NO_3)_2 \cdot 3Cu(OH)_2$ and a catalyst for reducing pollutant gases, accelerating the reaction and cooling formed by a pyrophoric metal or a pyrophoric alloy on a carrier. (Corresponds to U.S. Patent No. 5,542,999).

DE 44 11 654 C2: A gas-generating mixture, in particular for air bags, comprises from 20 to 50% by weight of a nitrogen-rich organic compound, from 20 to 70% by weight of an inorganic oxidant, from 0 to 40% by weight of a transition metal oxide and from 0.1 to 20% by weight of a zeolite.

DE 44 23 088 A1: The subject invention concerns a propellant mixture for producing propellant gas for passenger protection systems in motor vehicles, in particular airbag systems. According to this invention, this propellant mixture comprises fumaric acid, with a share of 20 to 45% by weight, as well as an inorganic oxidant with a share of 55 to 80% by weight. These revealed propellant components are non-toxic and characterized by a high thermal stability as well as low hygroscopicity. In addition, this propellant contains only minor traces of pollutant gases, with even combustion residues being non-toxic. (Corresponds to U.S. Patent No. 5,525,170).

DE 44 35 790 A1: The invention relates to a gas generator propellant, in particular for airbags, comprising (A) at least one carbonate, hydrogencarbonate, or nitrate of guanidine, aminoguanidine, diaminogranidine or tiaminoguaniding, (B) at least one alkali metal nitrate, alkaline earth metal nitrate or ammonium nitrate as oxidant, and (C) at least one carrier substance selected from silicon dioxide, alkali metal silicates, alkaline earth metal silicates or aluminosilicates and/or at least one oxygen-supplying carrier substance selected from iron (III) oxide, cobalt oxides, manganese dioxide and copper (II) oxide, for moderating combustion and improving slag formation. The gas generator propellant has improved combustion behaviour and improved slag formation. (Corresponds to Canadian Patent Application No. 2,172,822).

DE 94 16 112.7: The invention relates to a gas generator propellant, in particular for airbags, comprising (A) at least one carbonate, hydrogencarbonate, or nitrate of guanidine, aminoguanidine, diaminogranidine or tiaminoguaniding, (B) at least one alkali metal nitrate, alkaline earth metal

nitrate or ammonium nitrate as oxidant, and (C) at least one carrier substance selected from silicon dioxide, alkali metal silicates, alkaline earth metal silicates or aluminosilicates and/or at least one oxygen-supplying carrier substance selected from iron (III) oxide, cobalt oxides, manganese dioxide and copper (II) oxide, for moderating combustion and improving slag formation. The gas generator propellant has improved combustion behaviour and improved slag formation. (Corresponds to Canadian Patent Application No. 2,172,822).

DE 195 05 568 A1: The present invention concerns propellants for gas generators containing (as the nitrogen-containing compound, *i.e.*, fuel) at least one compound from the group comprising tetrazoles, triazoles, triazines, cyanic acid, urea, derivatives or salts thereof; (as oxidants) compounds from the group comprising peroxides, nitrates, chlorates or perchlorates; combustion moderators capable by heterogenous or homogenous catalysis of influencing the combustion process and velocity thereof; and, optionally, additives capable of reducing the proportion of toxic gases. (Corresponds to Canadian Patent Application No. 2,211,579 and PCT WO 96/26169).

DE 195 31 130 A1: A gas generating substance consists of an oxidising agent that is a nitrate of spinel-forming divalent metal, a nitrogen-rich cpd, a slag-forming agent that is the oxide of a spinel-forming trivalent metal or a perovskite-forming tetravalent metal. The nitrate and the oxide are in such proportions that when ignited, a spinel or perovskite is formed. An organic cpd. may also be present. Also claimed is a process for mfg. the gas generating substance that involves adding water so that the nitrate dissolves and then granulating the substance with drying and pressing it.

DE 196 17 538 C1: A mixture of substances for the pyrotechnic generation of propellants for motor vehicle passenger protection devices consists of: (a) 10 to 50 wt % of a fuel selected from the acid dihydrazide group and (b) 50 to 90 wt % of an inorganic oxidiser selected from the group of nitrates and peroxides or their mixtures, in relation to the total weight of the mixture of fuel and

oxidiser, and (c) possibly up to 30 wt % in relation to the total weight of the mixture, of a metal oxide and (d) possibly further additives of auxiliaries. The mixture of the invention is azide-free, consists of non-toxic components, is highly stable thermally and chemically, has an adequate rate of combustion and good ignitibility, where the combustion temperatures are markedly lower than those of prior art gas-generating mixtures, the quantity of gaseously generated fine dust particles is smaller, the combustion residues are easily filtrable, the propellant gas composition is essentially benign, the concentrations of noxious gases like CO and NO_x in the propellant are as small as possible and the raw materials are particularly cheap.

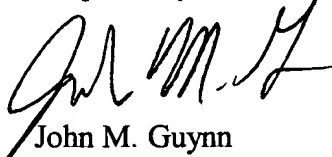
DE 196 43 468 A1: An azide-free solid mixture for pyrotechnically generating gas, in particular propellant gas for motor vehicle passenger protection systems, contains a fuel, an oxidiser and a coolant selected in the group of the inorganic carbonates. The disclosed mixture is characterised in that the proportion of coolant in the solid mixture amounts to at least 5 wt % and is shaped as coarsened grains.

Since all remaining listed references are either in the English language or are accompanied by a translation into English, no concise explanation of relevance is required under 37 C.F.R. § 1.98(a)(3).

This disclosure is being filed within three (3) months of filing the application and before the mailing of the first Office Action; therefore, no fee is due.

Dated this 19th day of December 2000.

Respectfully submitted,



John M. Guynn
Attorney for Applicants
Registration No. 36,153



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PATENT TRADEMARK OFFICE

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TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT
(Under 37 CFR 1.97(b) or 1.97(c))

Docket No.
15268.1

In Re Application Of: Gast et al.

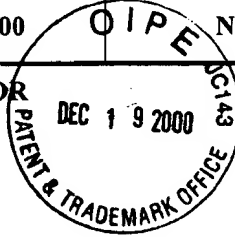
Serial No.
09/646,767

Filing Date
September 19, 2000

Examiner
Not Yet Assigned

Group Art Unit
Not Yet Assigned

Title: PROPELLANTS FOR GAS GENERATOR



Address to:
Assistant Commissioner for Patents
Washington, D.C. 20231

37 CFR 1.97(b)

1. ☒ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application; within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; or before the mailing date of a first Office Action on the merits, whichever event occurs last.

37 CFR 1.97(c)

2. ☐ The Information Disclosure Statement submitted herewith is being filed after three months of the filing of a national application, or the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; or after the mailing date of a first Office Action on the merits, whichever occurred last but before the mailing date of either:

1. a Final Action under 37 CFR 1.113, or
 2. a Notice of Allowance under 37 CFR 1.311,
- whichever occurs first.

Also submitted herewith is:

- ☐ a certification as specified in 37 CFR 1.97(e);

OR

- ☐ the fee set forth in 37 CFR 1.17(p) for submission of an Information Disclosure Statement under 37 CFR 1.97(c).

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT
(Under 37 CFR 1.97(b) or 1.97(c))

Docket No.
15268.1

In Re Application Of: Gast et al.

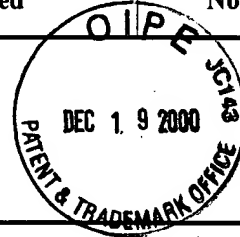
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09/646,767

Filing Date
September 19, 2000

Examiner
Not Yet Assigned

Group Art Unit
Not Yet Assigned

Title: PROPELLANTS FOR GAS GENERATOR



Payment of Fee

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

- ☐ A check in the amount of _____ is attached.
- ☒ The Assistant Commissioner is hereby authorized to charge and credit Deposit Account No. **23-3178** as described below. A duplicate copy of this sheet is enclosed.
- ☐ Charge the amount of _____
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I certify that this document and fee is being deposited on _____ with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

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***This certificate may only be used if paying by deposit account.**

Signature

Signature

Dated: December 19, 2000

John M. Guynn
Attorney for Applicants
Registration No. 36,153



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PATENT TRADEMARK OFFICE

CC:

CERTIFICATE OF MAILING BY "EXPRESS MAIL" (37 CFR 1.10)Applicant(s): **Gast et al.**

Docket No.

15268.1

Serial No.

09/646,747

Filing Date

September 19, 2000

Examiner

Not Yet Assigned

Group Art Unit

Not Yet AssignedInvention: **PROPELLANTS FOR GAS GENERATOR**

I hereby certify that this Information Disclosure Statement and other documents as listed below
(Identify type of correspondence)

is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under
37 CFR 1.10 in an envelope addressed to: The Assistant Commissioner for Patents, Washington, D.C. 20231 on
December 19, 2000
(Date)

**022913**

PATENT TRADEMARK OFFICE

John M. Guynn

(Typed or Printed Name of Person Mailing Correspondence)

(Signature of Person Mailing Correspondence)**EL74618782US**

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Note: Each paper must have its own certificate of mailing.

Transmitted: Information Disclosure Statement
Form PTO-1449 Listing Twenty-Seven (27) References
Copies of the Listed Twenty-Seven (27) References
Transmittal Letter
Postcard